Free Questions for 4A0-205 by certscare

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Question 1

What is the metro area network?

Options:

A- The metro area network is that portion of network that passes through a city to provide connections to several customers.

B- The metro area network is located between access and core domains.

C- The metro area network is made of OCS/SWDM nodes only, as no pure photonic nodes are used here.

D- The metro area network is located in between two access area networks and made of photonic nodes only (no OCS/SWDM nodes are used there).

Answer:

A

Explanation:

The Metro Area Network (MAN) is a telecommunications network that spans a metropolitan area and connects multiple local area networks (LANs) or business networks together. It typically covers an area that is larger than a LAN but smaller than a wide area network (WAN). The purpose of a MAN is to provide a high-bandwidth, low-latency communication infrastructure for businesses and other organizations in a metropolitan area.

Cisco, 'Metro Ethernet Services,' https://www.cisco.com/c/en/us/solutions/service-provider/metro-ethernet-services/index.html

Techopedia, 'Metro Area Network (MAN),' https://www.techopedia.com/definition/26896/metro-area-network-man

Question 2

Question Type: MultipleChoice

Which use case is most suitable for the deployment of a star topology?

Options:

A- Access networks, for collecting traffic towards the main central node

B- ASON networks, to protect traffic via GMPL5 protocols

C- Backbone networks, for supporting protection routes

D- SNCP-protected links

Answer:

A

Explanation:

A star topology is a network design where all devices are connected to a central hub, which acts as a central point of control and management for the network. This type of topology is commonly used in access networks, where a central node is used to aggregate traffic from multiple users or devices, and then forward it to the core network. This design allows for efficient use of resources and easy management of the network.

'Computer Networking: A Top-Down Approach' by James Kurose and Keith Ross (Chapter 3)

'Data Communications and Networking' by Behrouz A. Forouzan (Chapter 2)

Question 3

Question Type: **MultipleChoice**

What is a trail?

Options:

A- An entity to encapsulate a low order signal into a high order container

B- A transparent transport of a client signal

C- A link between end points to increase the power budget of the optical link

D- A physical link between two optical amplifiers

Answer:

B

Explanation:

A trail is a transparent transport of a client signal. A trail is a physical link between two points in an optical network, allowing for the transport of a client signal from one point to the other. It is a low-order signal, such as a 10G Ethernet or a Fibre Channel signal, encapsulated into a high-order container, such as a 40G or 100G signal. This allows for the transport of the client signal over longer distances, increasing the power budget of the optical link.

Question 4

With reference to trails and services, which of the following sentences is correct?

Options:

A- Trails are transported over services; that is, trails are clients with respect to services.

B- A trail can interconnect three ports, while a service always two.

C- Services are transported over trails; that is, services are clients with respect to trails.

D- A service is always associated to a single wavelength, while a trail can involve multiple wavelengths.

Answer:

C

Explanation:

Services are transported over trails; that is, services are clients with respect to trails. A service is a logical connection that is used to transport data from one point to another. It is created over a trail, which is a physical connection that is established by using multiple wavelengths. As such, services are clients with respect to trails, as they are transported over them.

Question 5

What is a degree-1 node?

Options:

A- A node with only one direction and therefore a terminal node

B- A node with only one express channel and therefore made of two sides

C- A node with only east and west sides without directions towards north and south

D- A node with one direction only and therefore used as In-Line-Amplifier (ILA)

Answer:

A

Explanation:

A degree-1 node is a node that only has one direction, and it is therefore a terminal node. This means that the node only has one input and one output port. It does not have any other ports to connect to other nodes or fibers. This is a common feature of some optical transport networks, such as ring networks, where a degree-1 node serves as the endpoint of the ring.

Question 6

What is the function of a pre-amplifier in an optical network?

Options:

A- Through the pre-amplifier, the optical signal is amplified at the receiver side after it travels along the fiber from another node.

B- Through the pre-amplifier, the optical signal is amplified at the transmitter side before it is sent to the line span.

C- Through the pre-amplifier, the optical signal is amplified both the receiver side and at the transmitter side.

D- Through the pre-amplifier, the optical signal is amplified within the node internally to recover internal losses due, for instance, to cascaded filters.

Answer:

B

Explanation:

A pre-amplifier is an optical amplifier that is used to boost the power of the received optical signal before it is detected by the receiver in an optical communication system. This is done to overcome the loss of power that occurs as the signal travels through the optical fiber and to ensure that the receiver can detect the signal. The pre-amplification stage is typically located close to the receiver in order to minimize the distance that the signal has to travel between the amplifier and the receiver, which helps to reduce the noise and distortion in the signal.

Question 7

Which of the following sentences about FlexGrid is false?

Options:

A- FlexGrid allows a more efficient channel spacing.

B- Channels in FlexGrid systems are allocated with a granularity of 27.5GHz.

C- FlexGrid systems use specific sets of boards. Old generation WDM systems need to be upgraded to support FlexGrid.

D- The FlexGrid is currently standardized by ITU-T.

Answer:

C

Explanation:

FlexGrid is a flexible grid technology that allows for variable channel spacing and bandwidth allocation. It uses the same sets of boards as the traditional fixed grid systems and it does not require upgrading the old generation WDM systems.

'Flexible Grid Optical Networks: From Concepts to Realizations' by Diomidis S. Michalopoulos and George K. Karagiannidis

'Flexible Grid and Flexible Spectrum Optical Networks' by Diomidis S. Michalopoulos and George K. Karagiannidis

'Flexible Grid Optical Networks' by Diomidis S. Michalopoulos and George K. Karagiannidis

Question 8

Question Type: MultipleChoice

When monitoring the quality of the received signal in WDM, an open eye indicates:

Options:

A- Low noise

B- High distortion

C- High jitter

D- Presence of high inter-symbolic interference

Answer:

A

Explanation:

An open eye pattern indicates that the signal is not affected by noise, and the received signal is of high quality. This is because an open eye pattern is the result of a signal that is aligned in time, and is not affected by noise or other distortions.

'Optical Fiber Communications' by Gerd Keiser

'Fiber-Optic Communications Technology' by Djafar K. Mynbaev

'Optical Communications' by Gerd Keiser

Question 9

WDM allows transmission systems to:

Options:

A- Transport multiple signals transparently, onto several wavelengths, all together over one single fiber

B- Increase the bit rate of each client signal by spreading it over multiple wavelengths

C- Share a single signal among multiple fibers doing load balancing, and thus increasing the reliability of the optical transmission

D- Allocate different signals to different time slots

Answer:

A

Explanation:

WDM (Wavelength Division Multiplexing) allows transmission systems to transport multiple signals transparently, onto several wavelengths, all together over one single fiber. This allows for increased capacity, as many different signals can be transmitted at the same time and along the same fiber. Other advantages include improved signal integrity and reduced signal attenuation.

Question 10

How does a Raman pump work in the 1830 specific implementation?

Options:

A- The amplification is done simultaneously for all channels as they enter the board.

B- As the incoming signal power increase, the gain of the amplifier is reduced.

C- The pump light travels in the same direction of the signal, amplifying it while it flows in the fiber towards the following node.

D- The pump light travels in the opposite direction of the signal to be amplified, amplifying it while it arrives from the adjacent node.

Answer:

D

Explanation:

In Raman amplification, a pump laser is used to excite the Raman-active molecules in the fiber, which then amplifies the signal light as it travels in the opposite direction. In the 1830 specific implementation, the pump laser is typically a high-power laser that is launched into the fiber in the opposite direction to the signal. The pump light interacts with the Raman-active molecules in the fiber, which then amplifies the signal light as it travels in the opposite direction. This allows the Raman pump to provide a gain that increases with distance, which can be used to compensate for the loss of signal power as it travels through the fiber.